

Amendments to the Claims:

1. (Currently Amended) A method, in a computer node, for transferring a data message, the method comprising:

identifying a pre-defined destination node, the pre-defined destination node being within a plurality of remote computer nodes to which data packets are able to be sent over a data communications network;

queuing, in an expedited transmission queue that is separate from a normal data packet queue, a first data packet that is addressed to the pre-defined destination node, wherein the normal data packet queue is used to queue data packets for transmission to other computing systems within the plurality of remote computer nodes, the other computing systems comprising destination nodes that are not the pre-defined destination node;

~~transferring a~~ sending, through a communications adapter, the first data packet to a speculatively the pre-defined destination node;

loading a packet descriptor associated with a second data packet into a the communications adapter, wherein the loading is concurrent with the transferring sending and the packet descriptor identifies a second destination node that is the speculatively pre-defined-destination node; and

transferring, in dependence upon the packet descriptor, a the second data packet to the pre-defined second destination node over the data communications network.

2. (Currently Amended) The method according to claim 1, wherein the expedited transmission queue comprises a fast data queue, and wherein the transferring sending of the first data element packet and the transferring of the second data element packet comprises loading the first data element packet and the second data element packet into a the fast data queue, wherein the fast data queue only queues data elements packets for transmission to the pre-defined destination node over the data communications network.

3. (Currently Amended) The method according to claim 1, wherein at least one of the first data ~~element packet~~ and the second data ~~element packet~~ each comprise a user data portion that is equal to ~~the~~ a size of a cache buffer.

4. (Currently Amended) The method according to claim 1, wherein the loading further comprises configuring, concurrently with the ~~transferring~~ sending of the first data ~~element packet to the pre-defined destination node~~, the communications adapter for the transferring of the second data ~~element packet to the pre-defined destination node over the data communications network~~.

5. (Currently Amended) The method according to claim 1, wherein the expedited transmission queue comprises a fast data queue and a fast descriptor queue, and wherein the loading comprises loading the packet descriptor into a the fast descriptor queue for subsequent transfer to the communications adapter, and wherein the method further comprises loading the second data packet that is associated with the packet descriptor into the fast data queue.

6. (Cancelled)

7. (Currently Amended) The method according to claim 5, further comprising:
altering the packet descriptor, after the loading the packet descriptor and while the packet descriptor is in the fast descriptor queue, so as to change the second destination node to be a remote destination node that is different than the pre-defined destination node, and

reloading the packet descriptor into the communications adapter after the altering and prior to transferring the second data element packet.

8. (Currently Amended) A computing node comprising:
a fast data element transmitter adapted to:

identify a pre-defined destination node, the pre-defined destination node being within a plurality of remote computer nodes to which data packets are able to be sent over a data communications network;

queue, in an expedited transmission queue that is separate from a normal data packet queue, a first data packet that is addressed to the pre-defined destination node, wherein the normal data packet queue is used to queue data packets for transmission to other computing systems within the plurality of remote computer nodes, the other computing systems comprising destination nodes that are not the pre-defined destination node;

send, through a communications adapter, the first data packet to the pre-defined destination node for transferring a first data element and a second data element to a pre-defined destination; and

a fast descriptor interface for loading adapted to load a packet descriptor associated with a second data packet into the communications adapter concurrently with the transferring sending of the first data packet by the fast data element transmitter, wherein the packet descriptor identifies the pre-defined destination and is used to configure the fast data packet transmitter for transferring the a second data element, and wherein the fast data element transmitter is further adapted to transfer, in dependence upon the packet descriptor, the second data packet to the second destination node over the data communications network.

9. (Currently Amended) The computing node according to claim 8, further comprising a fast data queue within the expedited transmission queue for queuing data elements for transmission to the pre-defined destination node, and

wherein the fast data element transmitter is further adapted to send the first data packet and transfer the second data packet by loading the first data packet and the second data packet into a the fast data queue, wherein the fast data queue only queues data packets for transmission to the pre-defined destination node over the data communications network.

10. (Currently Amended) The computing node according to claim 8, wherein at least one of the first data ~~element~~ packet and the second data ~~element~~ packet each comprise a user data portion that is equal to ~~the~~ a size of a cache buffer.

11. (Currently Amended) The computing node according to claim 8, wherein the pre-defined destination node is associated with a neighboring computer node.

12. (Currently Amended) The computing node according to claim 8, further comprising a fast descriptor queue within the expedited transmission queue for queuing the packet descriptor for subsequent transfer to the fast descriptor interface,

wherein the fast descriptor interface loads the packet descriptor into the fast descriptor queue for subsequent transfer to the communications adapter, and

wherein the fast data element transmitter loads the second data packet that is associated with the packet descriptor into the fast data queue.

13. (Cancelled)

14. (Currently Amended) A signal bearing medium ~~including~~ tangibly encoded with a program which, when executed by a processor, performs operations for transferring a data message, the operations comprising:

identifying a pre-defined destination node, the pre-defined destination node being within a plurality of remote computer nodes to which data packets are able to be sent over a data communications network;

queuing, in an expedited transmission queue that is separate from a normal data packet queue, a first data packet that is addressed to the pre-defined destination node, wherein the normal data packet queue is used to queue data packets for transmission to other computing systems within the plurality of remote computer nodes, the other computing systems comprising destination nodes that are not the pre-defined destination node;

transferring a sending, through a communications adapter, the first data packet to a the pre-defined destination node;

loading a packet descriptor associated with a second data packet into a the communications adapter, wherein the loading is concurrent with the ~~transferring~~ sending and the packet descriptor identifies a second destination node that is the speculatively pre-defined-destination node; and

transferring, in dependence upon the packet descriptor, a the second data packet to the pre-defined second destination node over the data communications network.

15. (Currently Amended) The signal bearing medium of claim 14, wherein the expedited transmission queue comprises a fast data queue, and wherein the ~~transferring~~ sending of the first data ~~element packet~~ and the transferring of the second data ~~element packet~~ comprises loading the first data ~~element packet~~ and the second data ~~element packet~~ into a the fast data queue, wherein the fast data queue only queues data ~~elements packets~~ for transmission to the pre-defined destination node over the data communications network.

16. (Currently Amended) The signal bearing medium of claim 14, wherein each of at least one of the first data ~~element packet~~ and the second data ~~element packet~~ each comprise a user data portion that is equal to ~~the~~ a size of a cache buffer.

17. (Currently Amended) The signal bearing medium of claim 14, wherein the loading further comprises configuring, concurrently with the ~~transferring~~ sending of the first data ~~element packet~~ to the pre-defined destination node, the communications adapter for the transferring of the second data ~~element packet~~ to the pre-defined destination node over the data communications network.

18. (Currently Amended) The signal bearing medium of claim 14, wherein the expedited transmission queue comprises a fast data queue and a fast descriptor queue, and wherein the loading operation comprises loading the packet descriptor into a the fast descriptor queue for subsequent transfer to the communications adapter, and wherein the method further comprises loading the second data packet that is associated with the packet descriptor into the fast data queue.

19. (Cancelled)

20. (Currently Amended) The signal bearing medium of claim 18, wherein the operations further comprise altering the packet descriptor, after the loading the packet descriptor and while the packet descriptor is in the fast descriptor queue, so as to change the second destination node to be a remote destination node that is different than the pre-defined destination node, and

reloading the packet descriptor into the communications adapter after the altering and prior to transferring the second data ~~element~~ packet.

21. (New) The method according to claim 1, where in the loading is performed prior to receiving a command to transfer data contained in the second data packet to the pre-defined destination.

22. (New) The method according to claim 1, wherein the pre-defined destination is one of an adaptive nearest neighbor node within a cluster.